

Abstract

A medical laser therapy device, particularly for use in ophthalmology and surgery, comprises a controllable pump module with a coupling element for a waveguide, a beam control device in the form of a waveguide for supplying the pumping radiation delivered by the pump module to the applicator which is provided with a coupling element for the waveguide for introducing a target beam and/or treatment beam into the eye to be treated. The device is primarily characterized in that the pump module has laser diodes whose electromagnetic pumping radiation is in the spectral range from 800 nm to 815 nm, and in that an optics module is provided which couples the pumping radiation into the waveguide, in that the beam control device is an Nd-doped waveguide laser with a double core or single core and a suitable reflecting coating of the fiber end faces, the waveguide forming a laser cavity with radiation in a frequency range between 1050 nm and 1070 nm, in that the applicator is a laser slit lamp with zoom system having a device for frequency doubling which preferably comprises nonlinear optical material or periodically poled nonlinear optical material, in that the applicator has a device for power monitoring and a device for illuminating and observing the operating field, and in that the applicator has a target beam device whose radiation is coupled collinearly into the beam path for the therapy radiation by a suitable beamsplitter.

The medical therapy device is constructed in a modular manner.

Fig. 1